

A Review of Ants of the Subgenus *Myrmentoma*, Genus *Camponotus* (Hymenoptera, Formicidae), from Asian Palaearctic

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Abstract—Species from the subgenus *Myrmentoma* of the genus *Camponotus* from Asian Palaearctic are reviewed, their synonymy is examined (13 species names are placed into synonyms, three intraspecific forms are raised to the species rank), peculiarities of the distribution of the species and species groups are considered.

The subgenus *Myrmentoma* comprises about 50 species distributed chiefly in the S Holarctic; three species are known from India; one from Taiwan; and about 30 species from the Palaearctic (Bolton, 1995).

The subgenus was divided into species groups on the basis of a system proposed by Emery (1925a), with supplements and modifications to the group composition. For convenience, species are listed in alphabetical order within groups.

The present review was prepared using collections of the Zoological Institute, RAS, St. Petersburg (ZIN); the Zoological Museum, Moscow State University (ZM); Museum and Institute of Zoology, PAN, Warsaw (MIZ PAN); the Natural History Museum, Budapest (NHMB); the Natural History Museum, London (NHML); Institute of Zoology, Ukrainian Academy of Sciences, Ukraine (Kiev), including the collection of V.A. Karavaev (KK).

Subgenus *MYRMENTOMA* Forel, 1912

The type species *Formica lateralis* Olivier, 1792, subsequently designated: Wheeler, 1913 : 80.

Group *fallax*

Diagnosis. Thorax without mesopropodial depression; propodeum not flattened dorsally, depressed laterally so, that dorsum seems in lateral view like a more or less regular arc. Head and thorax shining or semimat; abdomen always shining.

Of 10 species of this group, 7 species are reviewed in the present paper; among them, 3 species are known from S Europe (*C. tergestinus* Muller), Taiwan (*C. truebi* Forel), and India (*C. wroughtoni* Forel).

Camponotus fallax (Nylander, 1856)

Nylander, 1856 : 57, ♀ (*Formica*), France; Mayr, 1861 : 36; ♀ ♂ ♀ (*Camponotus*); Emery, 1905 : 37; Forel, 1914 : 266; 1915 : 67; Emery, 1916 : 226; Bondroit, 1918 : 71; Soudeek, 1922 : 94; Karavaev, 1926 : 277; Karawajew, 1926c : 294; Alpatov, Arnoldi, 1928 : 715; Bernard, 1968 : 342; Arnoldi, Dlusskii, 1978 : 537; Agosti, Collingwood, 1987a : 58; 1987b : 283; Atanasov, Dlusskii, 1992 : 220; Bolton, 1995 : 98; Wheeler, 1917 : 29 (*caraye* var.); Emery, 1925a : 118; Karavaev, 1936 : 188; 1937 : 175; Karawajew, 1929 : 58 (*caraye subbarbara* var.) (nom. invalid.).

= *kamensis* Ruzsky, 1903 : 302, ♀ (*marginatus* var.). Kazan Province, Mamadyshskii uezd (today Tatarstan), holotype lost; 1905 : 248; Emery, 1925a : 118; Bolton, 1995 : 106; Wheeler, 1917 : 29 (*caraye* var.), syn. n.

= *marginatus*: Forel, 1874:40 (*Camponotus*); Mayr, 1877 : 4 (part.); E. Andre, 1882 : 140; Nasonov, 1889 : 58; Ruzskii, 1895 : 9; 1902a : 7; 1905 : 244, nec Latreille, 1798, syn. Emery, 1925a.

= *pageti* Hamann, Klemm, 1976 : 674, ♀ (*fallax* subsp.), Greece; Bolton, 1995 : 116, syn. n.

= *ruzskii* Emery, 1898 : 150, ♀ (*marginatus* var.), Sarepta (today environs of Saratov); Ruzskii, 1903 : 301; 1905 : 247; Emery, 1925a : 118; Kuznetsov-Ugamskiy, 1929b : 36 (*marginatus* subsp.); Ruzskii, 1946 : 69; Wheeler, 1917 : 29 (*caraye* var.); Arakelyan, 1994 : 85 (*Camponotus*); Bolton, 1995 : 121; Karawajew, 1926a: 192 (*caraye subbarbara* var.) (nom. invalid.), syn. n.

Distribution. Europe (to S Sweden in the North), the Caucasus, NW Kazakhstan; reported by Ruzskii (1946) from the SW Siberia. *C. fallax* inhabits chiefly deciduous forests, building nests in dry branches of trees.

According to the description, *ruzskii* ssp. differs from the nominative subspecies in red coloration of thorax. However, a study of vast material from different points of the habitat has shown that *C. fallax* thorax coloration varies from black (N part of the habitat) to red (S part), and individuals with transitional coloration occur even in the same nest. This fact enables one to abandon distinguishing *ruzskii* as subspecies. Var. *kamensis* Ruzsky (described from one worker) is a specimen with such transitional coloration. Var. *pageti* (described from a female) is, beyond doubt, a color aberration of *C. fallax*.

Camponotus himalayanus Forel, 1893, stat. n.

Forel, 1893 : 431, ♀ (*marginatus* var.), NW Himalayas; 1906 : 84 (*fallax* var.); Wheeler, 1917 : 29 (*caraye* var.); Emery, 1925a : 118.

= *marginatus*: Bingham, 1903 : 369 (*Camponotus*) (part.), nec Latreille, 1798, syn. n.

Distribution. Known from the type locality.

The species differs from *C. fallax* in brightly orange coxae and femora and coarser sculptured semi-mat head and thorax.

Reports of a finding of *C. marginatus* Latreille in the Himalayas (Bingham, 1903) refer to *C. himalayanus*.

Camponotus jejuensis Kim, Kim, 1986

Kim, Kim, 1986 : 140, ♀ (*Camponotus*), Korea; Bolton, 1995 : 106.

Distribution. Known from the type locality.

Camponotus keihittoi Forel, 1913

Forel, 1913b : 663, ♀♀ (*fallax* var.), Japan; Wheeler, 1923 : 5 (*caraye* var.); Morisita *et al.*, 1988 : 33; Terayama, Satoh, 1990 : 532 (*Camponotus*); Morisita *et al.*, 1991 : 43; Bolton, 1995 : 106.

Distribution. Japan.

The species is closely related to *C. quadrinotatus* Forel, being distinguished by the absence of erect hairs on propodeum.

Camponotus kolthoffi Stitz, 1934

Stitz, 1934 : 4, ♀ (*Camponotus* subgen. *Myrmentoma*), China: Guanxi Province; Wang, Xiao, Wu, 1989a : 222; Bolton, 1995 : 107.

Distribution. N China.

Camponotus lameeri Emery, 1898

Emery, 1898 : 150, ♀ ♀ ♂ (*marginatus* var.), Tashkent; Forel, 1904b : 13; 1904c : 177; Ruzskii, 1905 : 249; Kuznetsov-Ugamskii, 1923 : 242; Wheeler, 1917 : 29 (*caraye* var.); Emery, 1925a : 118; Forel, 1904a : 380 (*lateralis* var.); Tarbinskii, 1976 : 146 (*Camponotus*); Dlusskii, Zabelin, 1985 : 237; Dlusskii *et al.*, 1990 : 136; Bolton, 1995 : 107.

= *barbatus* Washkewitsch, 1926 : 1, ♀ ♀ ♂ (*fallax* subsp.), Dzhambul, bank of Ili River, types lost, nom. praecoc., nec Roger, 1863, syn. n.

= *barbiger* Donisthorpe, 1941 : 38 (*Camponotus*) nom. n. pro *C. fallax* var. *barbatus* Washkewitsch, 1926; Bolton, 1995 : 88, syn. n.

= *marginatus*: Mayr, 1877 : 4 (part.), nec. Latreille, 1798.

Distribution. Middle Asia, Kazakhstan. The species populates vegetation-covered bottomland, oases, and mountain forests, inhabiting xylophages' tunnels in old tree trunks (Dlusskii *et al.*, 1990).

By Vashkevich (1926), subsp. *barbatus* (nom. praecoc., nom. n.—*C. barbiger* Donisthorpe) differs from *C. lameeri* in the presence of erect hairs on lower part of head. However, this is an evident mistake, because *C. lameeri* also has the same hairs there.

Camponotus quadrinotatus Forel, 1886

Forel, 1886 : 142, ♀ ♀ (*marginatus* var.), Japan; Wheeler, 1906 : 326; Ruzskii, 1905 : 249 (*marginatus* subsp.); 1925 : 42; Kuznetsov-Ugamskii, 1928 : 5; Kuznetsov-Ugamskij, 1929a : 18; Ruzskii, 1946 : 69; Forel, 1907 : 19 (*fallax* subsp.); Wheeler, 1917 : 29 (*caraye* var.); Emery, 1925a : 118; Santschi, 1925 : 89, ♀ ♂ ; 1929 : 330; Wheeler, 1928 : 118; 1929 : 10; Onoyama, 1980 : 201; Ruzskii, 1926 : 109 (*Camponotus*), Dlusskii, Kupyanskaya, 1972 : 28; Dlusskii, 1974 : 53; Collingwood, 1976 : 307; Kupyanskaya, 1981 : 121; Wang, Xiao, Wu, 1989b : 327; Kupyanskaya, 1990 : 173; Morisita *et al.* 1988 : 33; 1991 : 43; Bolton, 1995 : 119.

= *brunni*: Ruzskii, 1925 : 42 (*marginatus* subsp.); 1926 : 169 (*Camponotus*), Bolton, 1995 : 90, nec Forel, 1901, syn. n.

= *marginatus*: Nasonov, 1889 : 10 (*Camponotus*) (part.), nec Latreille, 1798 et auct., syn. Kupyanskaya, 1990.

= *nigricolor* Ruzsky, 1925 : 42, ♀ (*maculatus quadrinotatus* var.), Primorsk Territory (nom. invalid.); 1926 : 109 (*quadrinotatus* var) (prim. valid. nom.), syn. Kuznetsov-Ugamskii, 1928.

= *rubicolor* Ruzsky, 1925 : 42 ♀ (*marginatus* var.), Khabarovsk, types lost; Ruzskii, 1926 : 109 (*fallax* m.); Bolton, 1995 : 121 (*aethiops* subsp.), syn. n. (provisorius).

Distribution. S Far East, Japan, Korea, NE China. The species populates coniferous and mixed forests, building nests in tree-trunk hollows (Kupyanskaya, 1990).

Ruzskii (1925, 1926) reported four close forms from the Far East: *C. brunni* Forel, *C. marginatus vitiosus* F. Smith, *C. quadrinotatus* var. *nigricolor*, and *C. fallax* m. *rubicolor*. All Ruzskii's materials on these species have been lost. Kupyanskaya (1990) underlined that only *C. quadrinotatus* was found in the Far East, including localities indicated by Ruzskii. Var. *nigricolor* differed from the nominative form in the absence of lightly colored spots on abdomen, but this feature occasionally occurred in representatives of *C. quadrinotatus*, then Kupyanskaya considered var. *nigricolor* to be a junior synonym of the latter with fairly good reason. More likely, the other three forms reported by Ruzskii, should be taken as synonyms of *C. quadrinotatus*, too. True, m. *rubicolor* was found by Ruzskii in soil under roots, which was not typical of *C. quadrinotatus*. Bolton (1995) recognized *rubicolor* and *vitiosus* as subspecies of *C. aethiops*, which was erroneous, because the latter was not distributed so far to the East.

Group *kiesenwetteri*

Diagnosis. Propodeum flattened dorsally, with straight or concave posterior surface; thorax with or without mesopropodeal depression. Body entirely sculptured, mat.

Additionally to the species listed below, I supposed the Indian species *C. confucii* Forel to belong to this group.

Camponotus aegeus Emery, 1915, stat. n.

Emery, 1915 : 4, ♀ ♀ ♂ (subgen. *Orthonotomyrmex libanicus* var. *aegea*), Rhodes Island; 1925a : 121 (subgen. *Myrmentoma libanicus* var.); Bolton, 1995 : 84 (*libanicus* subsp.).

= *libanicus*: Forel, 1888 : 261, ♀ (*Camponotus*); 1911 : 355, ooo, nec E. André, 1881, syn. Emery, 1925a.

= *robustus*: E. André, 1882 : 148, ♀ (*Camponotus*), Turkey (part.) (nom. praeocc., nec Roger, 1863), nec E. André, 1881, syn. Emery, 1925a.

Distribution. Asia Minor, Rhodes Island.

The species differs from *C. libanicus* in pointed apex of petiole scale.

Camponotus boghossiani Forel, 1911

Forel, 1911 : 357, ♀ (*Camponotus*), Turkey; 1914 : 273; Emery, 1925a : 121; Bolton, 1995 : 89.

Distribution. Asia Minor.

Emery (1915) believed var. *stenotica* (nom. n. pro *C. kiesenwetteri* var. *angustata* Forel, 1888, nom. praeocc., nec Latreille, 1802, nec Mayr, 1870) to belong to this species. Prior to studying the type material, I cannot conclusively establish the taxonomical status of the indicated form.

Camponotus kiesenwetteri Roger, 1859

Roger, 1859 : 241, ♀, nec ♂ (*Formica* subgen. *Hypoclinea*), Greece; Mayr, 1861 : 36 (*Camponotus*); Forel, 1879 : 94; E. André, 1882 : 150; Forel, 1886 : 160, ooo; 1911 : 353; Emery, 1925a : 121; Agosti, Collingwood, 1987a : 59; 1987b : 283; Bolton, 1995 : 106.

Distribution. Greece, Aegean Sea Islands, Asia Minor. The species inhabits dry grassy areas and thin forests, building nests in soil, often under rocks.

The three forms were described within *C. kiesenwetteri*: r. *nitidescens* Forel, 1888 (Cephalonia Island), r. *angustatus* Forel, 1888 (nom. praeocc., see notes to *C. boghossiani* Forel) and var. *cypria* Emery, 1920 (Cyprus). r. *nitidescens* possesses shining body and, apparently, its name should be taken as a junior synonym of *C. piceus* Leach. Only a study of the type material will conclusively determine the taxonomic status of these forms.

Camponotus libanicus E. André, 1881

E. André, 1881 : 54; ♀ (*Camponotus*), Lebanon; 1882 : 148; Emery, 1915 : 6; 1925a : 121; Tohme, 1969 : 11, f; Agosti, Collingwood, 1987a : 58; 1987b : 283; Bolton, 1995 : 108, nec Forel, 1888 : 261; 1911 : 355.

= *robustus*: E. André, 1882 : 148, ♂ (*Camponotus*), Turkey (part.) (nom. praecox., nec Roger, 1863), nec E. André, 1881, syn. Emery, 1925a.

= *sahlbergi* Forel, 1913 : 435, ♀ (*libanicus* r.), Asia Minor; Emery, 1925a : 121 (*libanicus* subsp.); Bolton, 1995 : 121, syn. n.

Distribution. Asia Minor, Middle East. The species populates dry, often semi-desert habitats, building nests in soil.

Forel (1913) distinguished r. *sahlbergi* from *C. libanicus* s. str. by more massive petiole scale. However, he probably compared the described specimens not with types but with figures of E. André (1881, p. 54, Figs. 14, 15) where the scale shape is not given quite correctly (cf. Emery, 1915). Emery (1915) classified the specimens, compared with r. *sahlbergi* by Forel, with the new variety *aeagea* which is, in my opinion, an independent species.

Group *lateralis*

Diagnosis. Propodeum flattened dorsally, with straight or concave posterior surface; thorax with or without mesopropodeal depression. Body only slightly sculptured, shining.

The group consists of 16 species, of which 11 are reviewed below; others are distributed in S Europe and NW Africa (*candiotus* Emery, *dalmaticus* Nylander, *figaro* Emery, *guanchus* Santschi, *sicheli* Mayr).

Camponotus abrahami Forel, 1913

Forel, 1913a : 435, ♀ ♀ ♂ (subgen. *Orthonotomyrmex libanicus* var.), Lebanon; Emery, 1925a : 121 (subgen. *Myrmentoma libanicus* var.); Tohme, 1969 : 11 (*Camponotus*); Bolton, 1995 : 83.

Distribution. Lebanon.

The species was initially described as a variety of *C. libanicus*, belonging to the group *kiesenwetteri* and characterized by mat body. However, *C. abrahami* is distinguished by very delicately sculptured and shining integuments. This species is close to *C. piceus*, differing from it in much thinner petiole scale.

Camponotus gestroi Emery, 1878

Emery, 1878 : 44, ♀ (*Camponotus*), Sardinia Island; E. André, 1882 : 148; Forel, 1886 : 181; 1894 : 4, ♀ ♂; 1913 : 435; Bondroit, 1916 : 46; Emery, 1916 : 226; 1920 : 257; 1924 : 170; 1925 : 119; Bernard, 1968 : 344; Agosti, Collingwood, 1987a : 58; 1987b : 283; Arkelyan, 1994 : 85; Bolton, 1995 : 101.

= *creticus* Forel, 1888 : 262, ♀ (*gestroi* subsp.), Sporades; 1911 : 356; 1913 : 435; Pisarski, 1971 : 730; Akta, 1976 : 133, syn. Agosti, Collingwood, 1987a.

= *sicheli*: Forel, 1879 : 94 (*Camponotus*), nec Mayr, 1866 et auct., syn. Emery, 1925a.

Distribution. Mediterranean, Asia Minor, Iraq, S Transcaucasus. The species populates dry open areas; building nests in soil, often under rocks.

Camponotus interjectus Mayr, 1877

Mayr, 1877 : 4, ♀ ♀ (*Camponotus*), Uzbekistan, syntypes at ZM, examined; Ruzskii, 1902b : 8; Karavaev, 1910 : 12; Forel, 1914 : 273; Wheeler, Mann, 1916 : 174; Collingwood, 1960 : 73; Pisarskii, 1967 : 414; Tarbinskii, 1976 : Dlusskii, Zabelin, 1985 : 236; Dlusskii et al., 1990 : 134; Bolton, 1995 : 105; Ruzskii, 1905 : 258 (*lateralis* subsp.); Karavaev, 1909 : 272; Ruzskii, 1923 : 2; Kuznetsov-Ugamskii, 1929b : 36.

Distribution. Middle Asia, Afghanistan; known from Middle East (Wheeler and Mann, 1916) and Daghestan (Kuznetsov-Ugamskii, 1929). Arnoldi (1949) reported from Talysh the name *C. interjectus transcausicus* (nomen nudum). *C. interjectus* inhabits semi-deserts and mountain steppes, building nests in soil.

Camponotus kopetdaghensis Dlussky, Zabelin, 1985

Dlusskii, Zabelin, 1985 : 236, ♀ (*gestroi* subsp.), Turkey; 1920 : 25 (*Camponotus*); 1925a : 120; 1925b : 70; Pisarskii, 1971 : 730; Bolton, 1995 : 107.

Distribution. Asia Minor, Iraq; indicated for Azerbaijan (Emery, 1925b).

Camponotus lateralis (Olivier, 1792)

Olivier, 1792 : 497, ♀ (*Formica*), France; Mayr, 1853a : 103; 1855 : 50, Nylander, 1856 : 58, ♀ ♀ ♂; Mayr, 1861 : 36 (*Camponotus*); Forel, 1874 : 40; 1892 : 307; E. André, 1881 : 150; Nasonov, 1889 : 57; Dalla

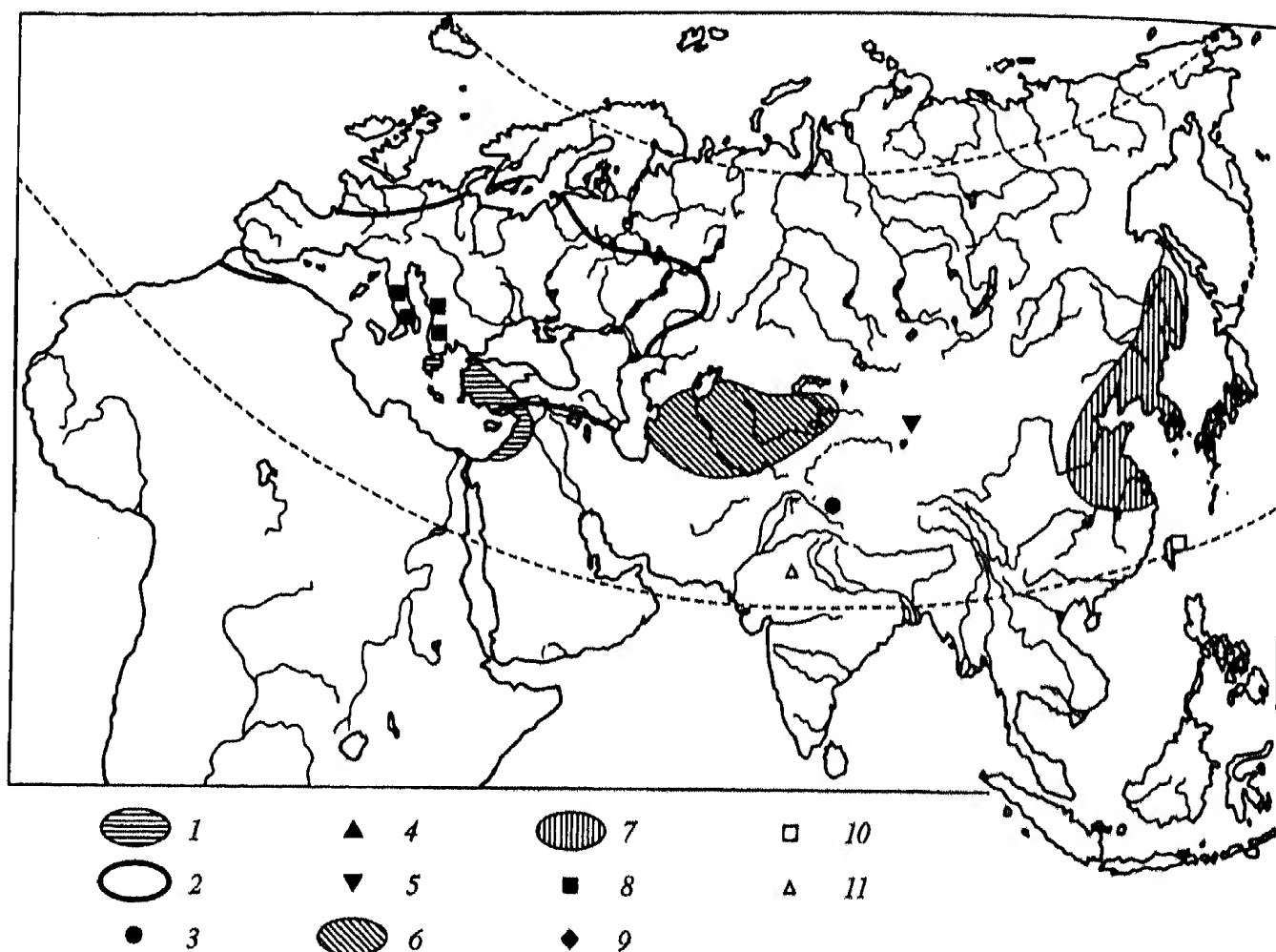


Fig. 1. Species distribution of the groups *kiesenwetteri* and *fallax* in Eurasia. (1) The group *kiesenwetteri*; (2) the group *fallax*: (2) *fallax*, (3) *himalayanus*, (4) *jejuensis*, (5) *kolthoffi*, (6) *lameeri*, (7) *quadrinotatus*, (8) *tergestinus*, (9) *keihitoi*, (10) *truebi*, (11) *wroughtoni*.

Torre, 1893 : 237; Ruzskii, 1902a : 7; 1905 : 251; Forel, 1911 : 354; 1915 : 71; Emery, 1916 : 226; Bondroit, 1918 : 78; Emery, 1925a : 120; 1925b : 68; Karavaev, 1926a : 193; 1926c : 295; Donisthorpe, 1950 : 1067; Bernard, 1968 : 343; Arnoldi, Dlusskii, 1978 : 552; Dlusskii, Zabelin, 1985 : 237; Agosti, Collingwood, 1987a : 58; 1987b : 283; Dlusskii *et al.*, 1990 : 136; Atanasov, Dlusskii, 1992 : 225; Arkelyan, 1994 : 88; Bolton, 1995 : 107.

= *kosswigi* Donisthorpe, 1950 : 61, ♀ (subgen. *Orthonotomyrmex*), Turkey, lectotype and paralectotypes deposited at NHML, examined; Bolton, 1995 : 107, syn. n.

Distribution. Mediterranean, Crimea, Caucasus, NW Africa, Asia Minor, Kopet Dag. The species populates forests of the Mediterranean type; building nests in dry branches on trees, stumps, a.o.; in Kopet Dag nests are in soil (Dlusskii *et al.*, 1990).

A number of intraspecific forms were described for this species. Var. *candiotus* Emery, 1894 is classified

as an independent species (Agosti and Collingwood, 1987a, b); var. *rebeceae* Forel, 1913, as an independent species in the present paper; var. *ebneri* Finzi, 1930, judging from the description, is a junior synonym of *C. piceus*. A study of the *C. kosswigi* types has shown the identity of these to *C. lateralis*. *C. kosswigi* differs in the only character, sparser erect pubescence on body, but similar individuals occur among typical *C. lateralis* over the whole habitat. At British Museum 1 ♀ of *C. kosswigi* is designated as the holotype; 3 others, as paratypes. However, describing the species, Donisthorpe (1950) separated no holotype. In this connection, I designate the specimen, labeled as "holotype," as lectotype (W. Turkey, Erbeyli, 14.V.1947, leg. C. Kosswig); others, as paralectotypes. For additional data on the synonymy, see Collingwood, 1978; Bolton, 1995.

Camponotus piceus (Leach, 1825)

Leach, 1825 : 294, ♀ ♀ ♂ (*Formica picea*), Italy; Roger, 1863 : 1 (*Camponotus*); Emery, 1925b : 67;

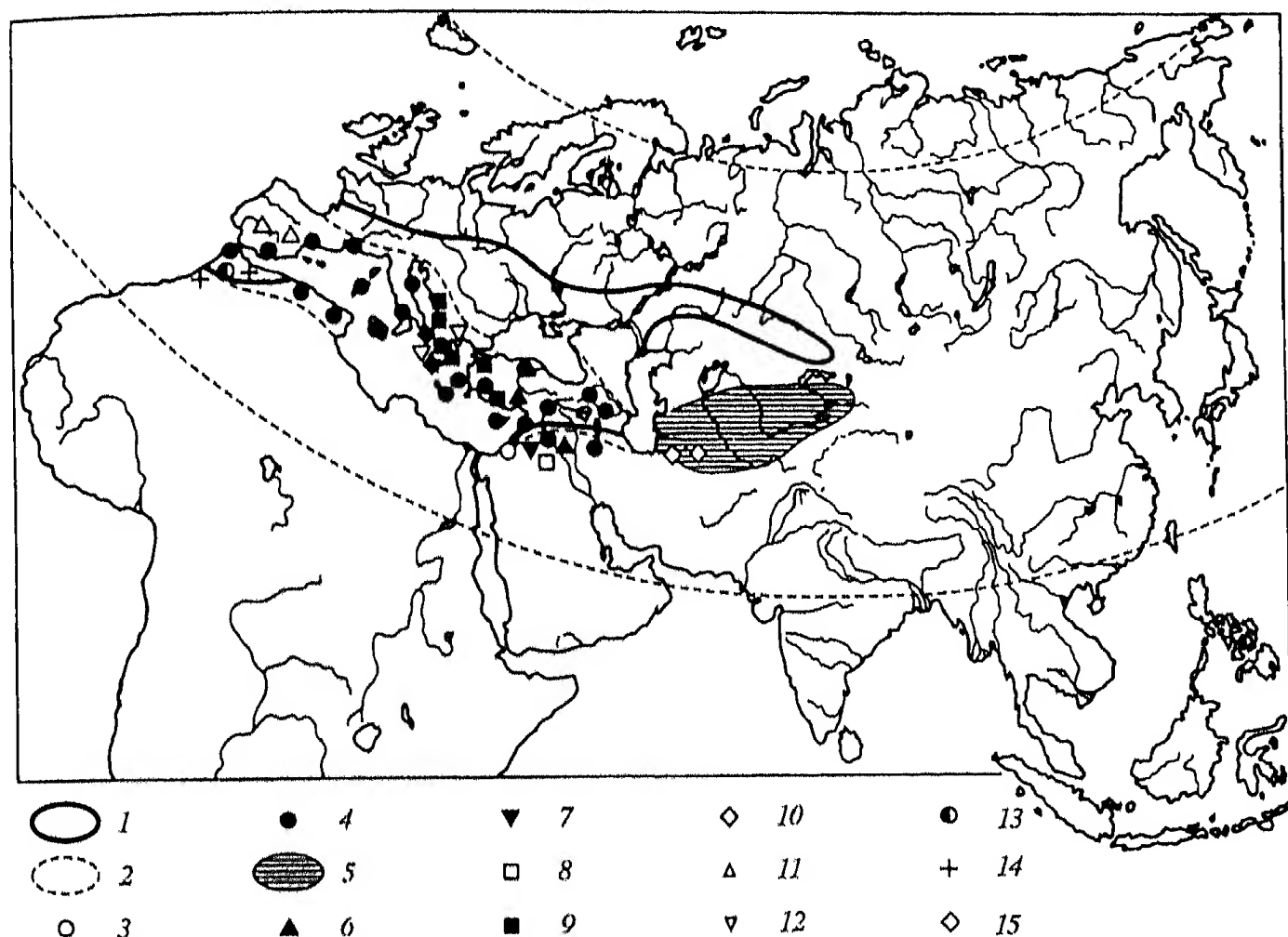


Fig. 2. Species distribution of the group *lateralis* in Eurasia: (1) *piceus*, (2) *lateralis*, (3) *abrahami*, (4) *gestroi*, (5) *interjectus* and *semirufus*, (6) *kurdistanicus*, (7) *rebecca*, (8) *staryi*, (9) *vogti*, (10) *kopetdaghensis*, (11) *figaro*, (12) *dalmaticus*, (13) *sicheli*, (14) *guanchus*, (15) *candiotus*.

Agosti, Collingwood, 1987a : 59; 1987b : 283; Atanasov, Dlusskii, 1992 : 222; Arakelyan, 1994 : 87; Bolton, 1995 : 117.

= *atricolor* Nylander, 1849 : 36, ♀ (*Formica*), SW Russia; Forel, 1886 : 208 (*Camponotus lateralis* var.); 1892 : 306; Emery, 1894 : 10; Ruzskii, 1902a : 7; 1903 : 302; Forel, 1904c : 134; Ruzskii, 1905 : 254; Karawajew, 1926a : 193; Kuznetzov-Ugamskij, 1929b : 35; Emery, 1925a : 120 (*lateralis piceus* var.) (nom. invalid.); 1925b : 67 (*piceus* var.); Karavaev, 1926 : 277, ♀ ♀ ♂; Karawajew, 1926b : 344; 1926c : 295; Karavaev, 1935 : 108; 1936 : 190; Arnoldi, Dlusskii, 1978 : 552 (*Camponotus*); Agosti, Collingwood, 1987a : 58; 1987b : 283, syn. Atanasov, Dlusskii, 1992.

= *ebentinus* Emery, 1869 : 2, ♀ ♂ (*Camponotus*), Italy, syn. Emery, 1925a.

= *ebneri* Finzi, 1930 : 24, ♀ (*lateralis* var.), Lebanon, syn. n. (provisorius).

= *foveolatus* Mayr, 1853b : 277, ♀ ♀ ♂ (*Formica foveolata*), Hungary; Forel, 1874 : 41; E. André, 1882 : 151; Forel, 1915 : 72, syn. Emery, 1925a.

= *merula* Losana, 1834 : 313, ♀ (*Formica*), France; Emery, 1894 : 10 (*Camponotus lateralis* var.); Ruzskii, 1902a : 7; 1905 : 255, ♀ ♂ Karawajew, 1912 : 596; Wheeler, Mann, 1916 : 134; Karawajew, 1926c : 295; Emery, 1916 : 226, ♀ ♀ (*lateralis* subsp.); Bon-droit, 1918 : 77 (*Camponotus*); Bernard, 1968 : 344; Arnoldi, Dlusskii, 1978 : 532, syn. Emery, 1925a, Atanasov, Dlusskii, 1992.

= *nitidescens* Forel, 1888 : 260, ♀ (*kiesenwetteri* r.), Kufalinia Island, syn. n. (provisorius).

= *rectus*: Forel, 1892 : 306 (*lateralis* var.), nec Forel, 1891, syn. Emery, 1896.

Distribution. S and C Europe, NW Africa, SE Europe, the Caucasus, Asia Minor, Middle East, N Kazakhstan. The species inhabits steppes, including

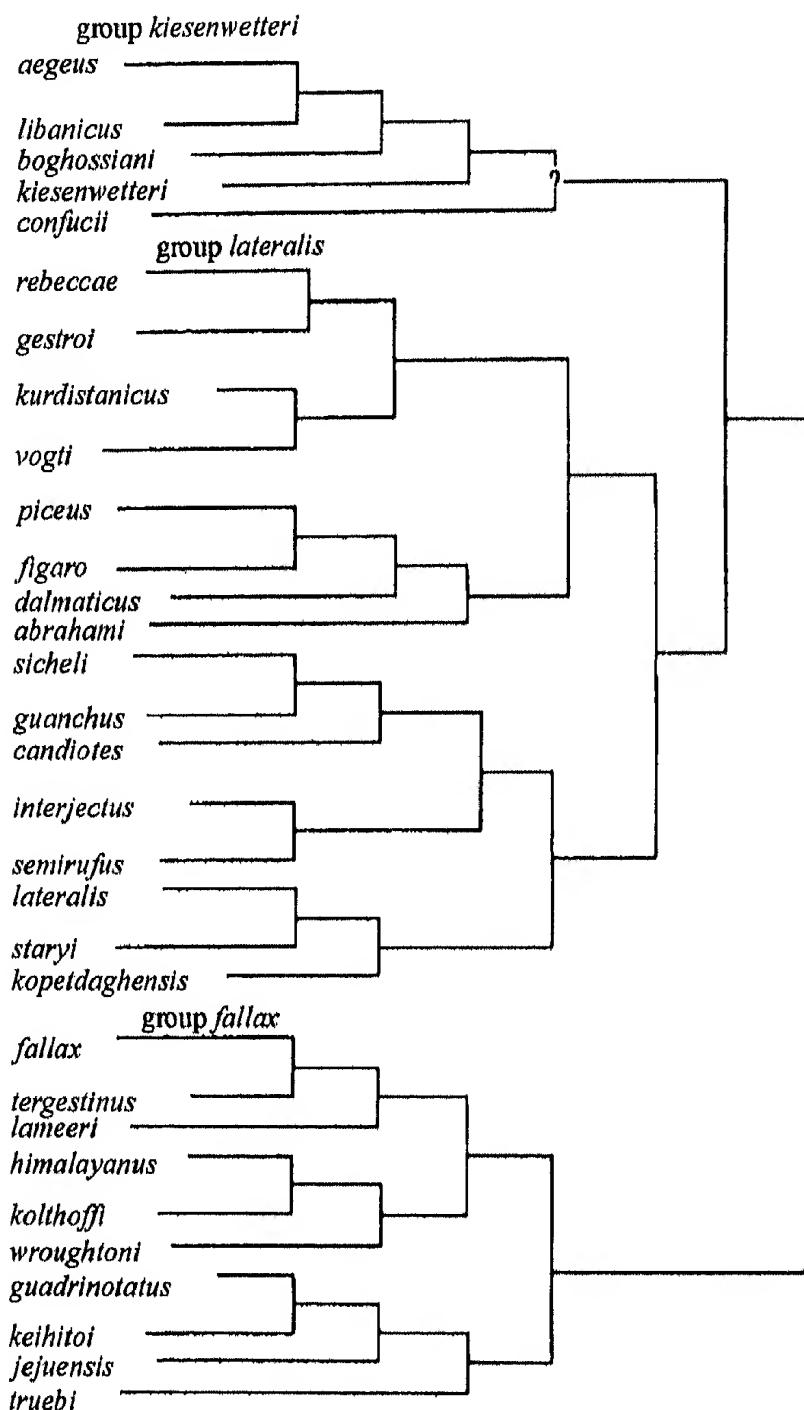


Fig. 3. Scheme of species relations within the subgenus *Myrmentoma* from Eurasia. *C. cornis*, *C. minus*, *C. nadimi*, and *C. varius* are difficult to relate to any of the indicated groups.

mountain ones, often occurs in dry light forests; building nests in soil, often under rocks.

The synonymy of *C. atricolor*, *C. merula*, and *C. piceus* was substantiated in detail by Atanasov and Dlusskii (1992). *C. kiesenwetteri* var. *nitidescens* from Lebanon is characterized by shining body; thus, it can not be classified with the group of mat species including *C. kiesenwetteri*. Judging by the description, its name is the synonym of *C. piceus*. Var. *ebneri* dif-

fers from *C. lateralis* in black body, but does not differ from *C. piceus*.

Camponotus rebecca Forel, 1913, stat. n.

Forel, 1913 : 436, ♀ (*lateralis* var.), Syria; Emery, 1925a : 120; 1925a : 69; Menozzi, 1933 : 81; Bolton, 1995 : 120 (*lateralis* subsp.).

Distribution. Syria.

This species differs from *C. lateralis* in weak mesopropodeal depression, being, in all probability, closely related to *C. kurdistanicus* and *C. vogti* from Asia Minor and Anterior Asia.

Camponotus semirufus Emery, 1925

Kuznetsov-Ugamskii, 1923 : 243, ♀ (*lateralis interjectus* var.), Uzbekistan, syntypes at KK, examined (nom. invalid.); Emery, 1925b : 65 (*interjectus* subsp.) (prim. valid. nom.); Tarbinskii, 1976 : 163 (*Camponotus*); Dlusskii, Zabelin, 1985 : 237; Dlusskii *et al.*, 1990 : 137; Bolton, 1995 : 123).

Distribution. Middle Asia, S Kazakhstan. The species inhabits saxaul and tamarix thickets, building nests in soil (Dlusskii *et al.*, 1990).

The species name given by Kuznetsov-Ugamskii (1923) was invalid; Emery (1925b) gave the first valid name and should be considered the author of *C. semirufus*.

Camponotus staryi Pisarski, 1971

Pisarski, 1971 : 730, ♀ (*Camponotus*), Iraq, holotype and paratypes deposited at MIZ PAN, examined; Bolton, 1995 : 125.

Distribution. The type locality.

Camponotus vogti Forel, 1906

Forel, 1906 : 187, ♀ (*Camponotus*), Turkey; 1914 : 273; Agosti, Collingwood, 1987a : 59; 1987b : 283; Emery, 1920 : 26 (*kurdistanicus* var.); 1925a : 120; 1925b : 670; Bolton, 1995 : 129.

Distribution. Yugoslavia, Asia Minor.

Morrison *et al.* (1991) classified *C. nipponensis* Santschi 1937 with the subgenus *Myrmentoma*, but this opinion was erroneous. As correctly indicated by Santschi (1937), the species belongs to the subgenus *Myrmambilis*.

Within the subgenus *Myrmentoma*, four more species were described from the Palaearctic: *C. cornis* Wang, Wu, 1994 (China), *C. minus* Wang, Wu, 1994 (China), *C. nadimi* Tohme, 1969 (Lebanon), and *C. varius* Donisthorpe, 1943 (India). I have not seen any representatives of these and cannot refer them to any of the groups discussed above.

In regard to the formation of the *Myrmentoma* fauna, it should be emphasized that the genus is di-

vided into three groups of species; among them, *piceus* and *kiesenwetteri* are morphologically close to each other, but the group *fallax* stands apart from the others within the genus.

The rather restricted habitat of *kiesenwetteri* species includes Greece, Islands of the Aegean Sea, Asia Minor, and the Middle East (Fig. 1). This area may be with good reason considered the center of formation of *kiesenwetteri* species.

The habitat of the group *lateralis* as a whole envelops the Ancient Mediterranean (Fig. 2); however, the species of the group belong to different complexes distributed rather far from one another. For example, the habitat of the complex *gestroi* (*rebecca*, *gestroi*, *kurdistanicus*, *vogti*) is basically similar to that of the group *kiesenwetteri*, and *gestroi* species are more closely related in morphology to species of the latter group rather than to any *lateralis* species. Most likely Anterior Asia is the center of the species formation of the *gestroi* complex as well as of the group *kiesenwetteri*.

For the most part, the European Mediterranean is populated by species of the complex *piceus* (*piceus*, *figaro*, *abrahami*, and *dalmaticus*); in this case *C. piceus* has a very wide habitat, being distributed far into NW Africa and as far as N Kazakhstan to the East. *C. figaro* (Spain) and *C. abrahami* (Middle East) are closely related to *C. piceus*, being, in all probability, its derivatives. The same is true for Balkanian *C. dalmaticus*.

More southern parts of the Ancient Mediterranean, in particular N Africa and Middle Asia, are the centers of the species diversity for two other, rather close to each other, species complexes of the group *lateralis*: *sicheli* (*sicheli*, *guanchus*, *candiotes*, *interjectus*, and *semirufus*) and *lateralis* (*lateralis*, *staryi*, and *kopetdagensis*) (Fig. 2). Among these, only *C. lateralis* is widely distributed in S Europe, the Crimea, and the Caucasus, and reaching Kopet Dag and NW Africa. The second European species, *C. candiotes*, is distributed in Balkans.

Thus, the group *lateralis* has four rather isolated centers of the species diversity: Balkan-Middle Eastern (including Asia Minor), Northern-Mediterranean (chiefly S Europe), Southern-Mediterranean (chiefly N Africa), and Anterior-Middle Asian.

An absolutely different pattern is observed for the group *fallax* (Fig. 1): the centers of its species diver-

sity and probably of origin, too, are located in the E Palearctic, from Middle Asia to Japan exclusive. The argument in support of the Eastern origin of *fallax* species is the fact that nearly all Nearctic species of the subgenus *Myrmentoma* are closely related to the very close, if not identical, group *caraye*. Of 10 Eurasian *fallax* species, only two very closely related to each other species, *C. fallax* and *C. tergestinus*, are distributed in Europe. The former species is distributed in deciduous forests of Middle, Southern, and Eastern Europe (as far as the Urals to the East), and the latter is known from Italy and Balkans.

The species of the complex *quadrinotatus* (*quadrinotatus*, *keihitoi*, *jejuensis*, *truebi*) are typical of E Palearctic, being distributed from the S Far East to the Taiwan Island).

The species of the complex *himalayans* (*himalayans*, *kolthoffi*, *wroughtoni*) populate mountains of Middle Asia.

In this way, the following diversity centers of different species complexes are observed for the group *fallax*: Southern-European, Central-Middle Asian, and Far Eastern. Whereas species of the remaining groups within the subgenus *Myrmentoma* have clearly Mediterranean origin, the *fallax* species are distributed, apparently, from the East to the West via S Palearctic, in contrast to a similarly directed, but more northern way of species distribution of the subgenus *Camponotus* s. str.

The scheme of species relations within the subgenus *Myrmentoma* is shown in Fig. 3.

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